amounts of carbon nanotubes, but only up to very limited concentrations – for example 0.35 wt%, as mentioned in WO 02/076888. The inventors substantially moved that border up, enabling to prepare at least ten times more concentrated suspensions (the value of 65 wt% for the sum of nanotubes/dispersant speaking for itself).

4. Clarke et al. broadly teach surface active and chaotropic agents (e.g. column 5) for dispersing the nanotubes, including guanidine, deoxycholates, dextrins, quaternary ammonium salts, nonionic detergents like Nonidet, Tween, and Pluronic, while generally including also SDS and Triton. Clarke teaches that "*preferred synthetic detergents have HLB (hydrophilic-lipophilic balance) value between about 7 and about 13.2*" (lines 49-50 at column 6). Example 1 shows the difference for three detergents having the HLB values between 13.1 and 40; a person skilled in the art can see, in Fig. 1A, that the difference between the detergents is not dramatic, the transmittance being between 83% and 89% for these assumingly totally different dispersants. Despite the broad range of considered detergents, Clarke does not attain any particularly high nanotube concentration, teaching that "*effective dispersions have been achieved utilizing concentrations as high as 1 mg/ml of SWCNT structures in aqueous dispersal agent solution*" (lines 31-33 at column 7). Said Clarke's teaching is supported in their Examples, wherein Examples 1-3 show a nanotube concentration of 0.1 wt%, and Example 4 a nanotubes concentration of 0.02 wt%; these low values markedly contrast with the concentrations achieved by the instant invention, which preferably provide up to 10 wt%, as exemplified in Example 4 (line 1 on page 7, line 5 on page 14 of the instant application).

5. Despite the broad range of considered detergents, Clarke incidentally includes only one material theoretically falling into the ambit of the block copolymers claimed in the instant invention, namely Poloxamer 188. However, according to the Clarke's general teaching, only detergents of a HLB value between 7 and 13.2 are suitable for their invention, and Poloxamer 188 has an HLB value of greater than 25, namely about 29 (see, for example:
http://www.springerlink.com/content/r1k1885737l83467/;
http://www2.basf.us/performancechemical/pdfs/Pluronic_NF_Grades.pdf).

6. It is clear, from the explanations above, that a person skilled in the art would not have deduced from Clarke's teaching that a block copolymer in a fluid selective toward at least two blocks of the copolymer will easily disperse carbon nanotubes up to concentrations of 100times higher than achieved by Clarke.

The Examiner observed that Clarke mixes 1 mg nanotubes in 1 ml, and further that the polymer/nanotubes ratio in one of the examples is 20. The applicant notes that said ratio ranges between 20 and 250 in Clarke's Examples, and further that the nanotube concentration in Clarke's Examples ranges from 0.02 wt% to 0.1 wt% (line 40 at col. 11 and line 44 at col. 12); wishing to simplify the examination process, the applicant has now amended the claims to make the difference between the instant invention and the cited technique still clearer, restricting the ratio to 0.1-10, and the nanotubes concentrations to at least 0.5 wt%. Although the cited document does not recognize the dispersing potential of block copolymers in a fluid selective toward at least two of the blocks, the invention as defined in the amended claims now excludes incidental overlaps even of a part of the parameters. The instant method of preparing a suspension of carbon nanotubes at a concentration of at least 0.5 wt%, comprising

mixing the nanotubes and a block copolymer in a fluid selective toward at least two blocks of the copolymer, at a ratio of 0.1-10, is novel and non-obvious.

Conclusion

7. It is respectfully submitted that, after the above explanations and amendments, the claims are ready for allowance.

Respectfully submitted

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